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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,088	08/04/2003	Joseph Michael Hoefler	A01399	6722

7590

11/07/2005

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EXAMINER

THEXTON, MATTHEW

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/634,088	Applicant(s) HOEFLER, JOSEPH MICHAEL	
	Examiner Matthew A. Thexton	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 8-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☒ Claim(s) 1-10 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>three sheets</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

This Office action replaces the Office action mailed 2005 September 15, and includes a newly started time period for response.

The Office action mailed 2005 September 15 is vacated.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-7, drawn to dispersion mixtures and methods of preparing same, classified in class 523 and 524, various subclasses.
- II. Claims 8-10, drawn to methods of treating tanned leather, classified in class 252, subclass 8.57.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the products of Group I can be used in other methods such as to lower gloss of coatings on paper, to provide bulk in polymers, to provide reinforcing in polymers.

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Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Kim Jessum 215-592-3689 on 2005 September 1 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-7. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8-10 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 2003 November 6 and 2004 May 14 have been considered by the examiner.

Ruppert (US 4763051), cited on form PTO/ISB/08A filed 2003 November 6 is irrelevant to the subject matter of this Application.

Claims Version

The claims as submitted have been examined.

Claims Analysis

Claim 1 is directed to an aqueous dispersion mixture comprising:

- a) 1-30 weight % silica particles, based on weight of the dispersion;

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- b) 0.01 to 10 weight % reacted aminosilane compound attached to the silica particles, based on the weight of the silica particles;
- c) 5-25 weight % anionic polymeric dispersing agent, based on weight of the silica particles; and
- d) aqueous medium.

Dependent claim 2 narrows and adds components as follows:

- a) 1-10 weight %; and
- e) 1-25 weight % polymer particles, both based on weight of the dispersion.

Claim 3 depends from claim 1 and limits silica particles to average diameter of 1-10 microns.

Independent claim 4 provides for a process of making a dispersion comprising:

- a) providing aqueous medium;
- b) admixing anionic polymeric dispersing agent and aminosilane compound into the aqueous medium;
- c) admixing silica particles into the prior mixture; and
- d) reacting or allowing to react said aminosilane compound with said silica particles.

Claim 5 depends from claim 4 and requires the proportions of claim 1.

Claim 6 depends from claim 4 and further requires admixing polymer particles.

Claim 7 depends from claim 4 and further limits silica particles to average diameter of 1-10 microns.

35 USC § 102 and 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections

Claims 1, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiratsuchi et al. (US 5856379-A).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '379 discloses aqueous dispersions of silica particles having reacted thereto a silane, such as aminopropyltriethoxy-silane (column 12, lines 25-26) and other aminosilane (column 5, line 65 to column 6, line 1), which is preformed in the presence of a dispersing agent such as polyacrylic acid (column 8, lines 51-53). The proportions disclosed are encompassed by Applicant's claim limitations. Although '379

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further reacts the treated silica with monomer to form a core shell type particle, Applicant's claims encompass such embodiments.

'379 discloses the necessity of the dispersant (column 6, lines 31-56). It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the steps of claims 4 and 5 since the disclosure of '379 is to the necessity that the dispersant be present when silica and silane are brought together, regardless of the order in which that occurs.

Claims 1, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenwood et al. (US 2004/0097600-A1) taken with Dorn (US 4927749).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '600 discloses aqueous dispersions of silica particles having reacted thereto a silane, such as aminosilanes (paragraph 0022 references US '749, which discloses aminosilanes, column 9 to column 11, line 22) combined with organic binder such as poly(acrylic acids) (paragraph 0023). The proportions disclosed are encompassed by Applicant's claim limitations.

It would have been obvious to one of ordinary skill in the art at the time of the invention to follow the plain suggestions of '600 to employ aminosilanes and polyacrylic acid to make the suggested dispersions, thus arriving at subject matter encompassed by Applicant's claims.

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Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Miyosawa (US 4330446).

The present claims are broadly discussed hereinabove in the section **Claims Analysis** which is incorporated by reference.

The reference '446 discloses film forming mixture comprising water, silica of 7 to 100 microns (column 2, lines 33-37), water soluble or dispersing acrylic copolymer (column 2, line 8), and di- or tri-alkoxy silane (column 2, lines 13-20, column 4, lines 12-33) such as aminosilanes (column 4, lines 30-33). The amount of silane is suggested to be 0.5 to 15 weight % based on the combined polymer and silica (column 4, lines 43-51). The amount of polymer to silica is stated to be 5:95 to 95:5 (column 4, lines 34-37). The total amount of solids is stated to be 5-40 weight % (column 6, lines 37-39). Addition of polymer particles (as required by claim 2) is suggested (column 7, lines 26-29) Reaction between the aminosilane and silica is described (column 5, lines 40-42).

In the event the reference is deemed to be of not sufficient specificity to sustain a conclusion of anticipation, then it is concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to have followed the plain suggestion and added water soluble or dispersible resin for coating (column 7, lines 26-29) substantially as Applicant has claimed.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mihoya et al. (US 5719206-A).

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The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '206 discloses aqueous dispersions of silica particles (column 3, line 4) having reacted thereto a silane, such as aminopropyltriethoxy-silane (column 2, lines 43-67), which is followed by reaction with an aqueous resin such as acrylic resins (column 3, lines 33-49) and other carboxyl group containing resins to form a well dispersed mixture suitable for coating a variety of substrates including leather (column 4, lines 26-34). The proportions disclosed are encompassed by Applicant's claim limitations (column 3, lines 14-20 and column 4, lines 20-25). The methods disclosed are distinct from Applicant's claims 4-7 (column 3, lines 21-32).

It would have been obvious to one of ordinary skill in the art at the time of the invention to follow the plain suggestions of '206 to employ aminosilanes and polyacrylic acid to make the suggested dispersions, thus arriving at subject matter encompassed by Applicant's claims.

Citation of Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wesp (US 3649582), cited by Applicant, discloses similar mixtures wherein the anionic polymeric dispersant is absent but an anionic thermoplastic latex copolymer is present.

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Emmons et al. (US 5663224), cited by Applicant, discloses use of aminosilane treated silica provides advantages relative to anionic polymeric dispersed silica. The conclusion that it would have been prima facie obvious to one of ordinary skill in the art to employ both means of handling silica simultaneously is rebutted by Applicant's showing.

Bogan, Jr. (US 5532307A) discloses anionic dispersants for ceramics such as silica. It does not disclose or suggest the use of aminosilanes.

Allowable Subject Matter

Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Thexton whose telephone number is 571-272-1125. The examiner can normally be reached on Monday-Friday, 9:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S. Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Matthew A. Thexton
Primary Examiner
Art Unit 1714